

Title (en)  
A multi-carrier CDMA transmission system with frequency and space diversity

Title (de)  
Mehrträger CDMA-Übertragungssystem mit Frequenz- und Raumdiversity

Title (fr)  
Système à transmission multiporteuse AMDC avec diversité en fréquence et en espace

Publication  
**EP 0929161 A2 19990714 (EN)**

Application  
**EP 99300047 A 19990105**

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US 653798 A 19980113

Abstract (en)  
A wideband CDMA transmission system is disclosed that incorporates transmit diversity in both frequency and space. Some embodiments of the present invention are capable of transmitting a wideband signal with a high data rate to an appropriately-designed wideband CDMA wireless terminal and are also capable of transmitting a narrowband (e.g., IS-95 compliant) signal to a CDMA wireless terminal in the prior art. Some embodiments of the present invention are capable of co-existing in the same frequency spectrum that is allocated to existing narrowband wireless systems. And in some embodiments of the present invention the coded symbols from the interleaver are distributed among multiple carriers that are then radiated by spatially separated antennas. An illustrative method of the present invention comprises: receiving a datastream of symbols that is to be transmitted to one wireless terminal; distributing at least some of the datastream of symbols to a first derivative datastream of symbols; distributing at least some of the datastream of symbols to a second derivative datastream of symbols; modulating the first derivative datastream of symbols onto a first carrier frequency to create a first modulated carrier; modulating the second derivative datastream of symbols onto a second carrier frequency that is different than the first carrier frequency to create a second modulated carrier; radiating the first modulated carrier from a first antenna; and radiating the second modulated carrier from a second antenna that is separated from the first antenna. <IMAGE>

IPC 1-7  
**H04B 7/06**; **H04B 7/12**

IPC 8 full level  
**H04B 1/69** (2006.01); **H04B 1/707** (2011.01); **H04B 7/02** (2006.01); **H04B 7/06** (2006.01); **H04B 7/12** (2006.01); **H04J 11/00** (2006.01); **H04J 13/00** (2006.01); **H04J 13/02** (2006.01); **H04L 5/02** (2006.01); **H04L 5/12** (2006.01)

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